



Transurethral Laser Ablation (TULA)

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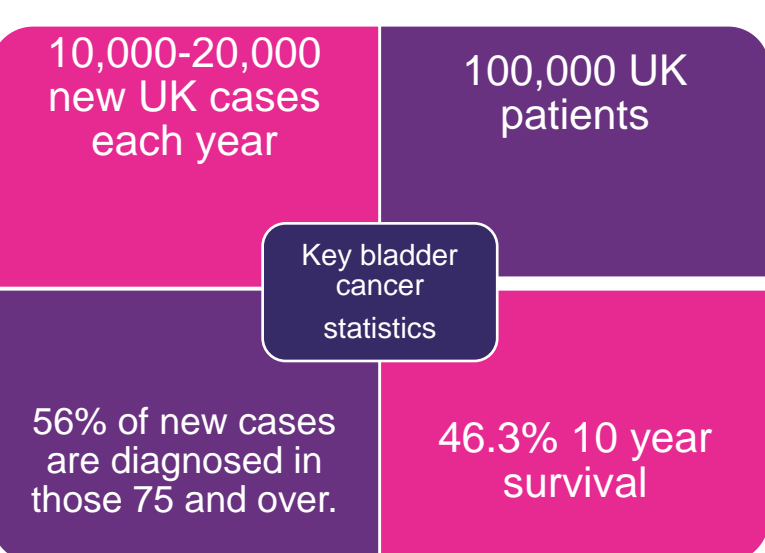
Introduction

Bladder cancer accounts for 4.5% of all new UK cancer cases and carries with it a mortality rate as high as 50%. It has the highest recurrence rate of any known cancer (80%). The average age at diagnosis is 73 and many of these patients carry with them a higher level of co-morbidity.¹

Often in NMIBC with superficial recurrence patients may only need their disease managed with cystodiathermy but find themselves on the receiving end of multiple transurethral resections under general anaesthetic.

NHS operating demands are high and were outstripping capacity before COVID-19. Following the pandemic the backlog will take years to clear. Nationally, there are 6.84 million patients awaiting treatment and 377,689 of those have waited over one year. Prior to the pandemic (July 2019) only 1,032 patients waited more than one year for treatment.²

A way of managing these patients in a streamlined and ambulatory fashion would be a hugely advantageous addition to the urological armamentarium and could be an essential tool when balancing resources.



- **Highest Recurrence Rate of All Cancers: 80%**
- **Most Expensive Cancer To Treat: £65 million annually.**
- **Around 40,000 bladder resections performed in the UK annually.**

Factors to consider in management of recurrent disease:

Patient Factors	System Factors	Covid 19 recovery efforts
<ul style="list-style-type: none"> • Aging and co-morbid population • Risk of GA and GA cognitive decline • Surgical risk of the procedure • Inpatient stay (1.2-2.1 days on average) • Treatment benefit <ul style="list-style-type: none"> • 30% reduction in death with recurrence treatment 	<ul style="list-style-type: none"> • Vast workload • Reduced theatre capacity • Competing with primary resections and other cancers • Backlog of cases • Delay in treatment could allow for disease progression. 	<ul style="list-style-type: none"> • Need to minimise disruption to scheduled, urgent invasive procedures. • Relocate inpatient surgical procedures to outpatient settings when feasible • Postpone elective surgical procedures

Traditional management of Bladder Cancer

Traditionally, the TURBT has been a staple in the management of both primary and recurrent bladder cancer. One of the key outcomes from the GIRFT report was to “*Improve patient experience and reduce length of stay*”. The average length of stay following a TURBT is between 1.2 and 2.1 days³ and only 40% are performed in an ambulatory capacity³.

Management of NMIBC, whilst having more favourable survival rates, needs to factor in the risk of recurrence. Patients often have repeat outpatient visits, cystoscopic surveillance and adjuvant treatment. In addition to this is the burden of repeat transurethral resections. In 2005 Sangar *et al.* estimated that the annual cost of managing bladder cancer was £55.39 million with an average of £8349.20 per patient. 17 years later and with a more ageing population this figure is likely to be much greater⁴.

Cost of diagnosis, treatment, and 5-year follow-up of each bladder cancer case in the UK

Type of treatment	%	Million £
TURBT low grade	60.3	35.25
TURBT high grade	10.2	6.1
Cystectomy	5.2	3.6
Radiotherapy	9.02	8.1
Systemic Chemo	1.1	1.5
		55.39

Transurethral Laser Ablation (TULA)

TULA is quickly becoming an established technique in the outpatient management of urothelial bladder lesions under local anaesthesia. Often used for very small, recurrent bladder tumours its scope and flexibility is ever expanding.

Standard Indication	Evolving Indications in Co-Morbid Patients
Low grade G1/2pTa	New Bladder Tumour
Small Tumours <1cm	Large Tumour or Multifocal Recurrence
Superficial Recurrence	High Grade Tumour
	Anticoagulated patients
	Palliative G3pTa/1 recurrence post BCG
	Post BCG/MMC recurrence in patients not fit for radical treatments

Advantages and disadvantages of TULA

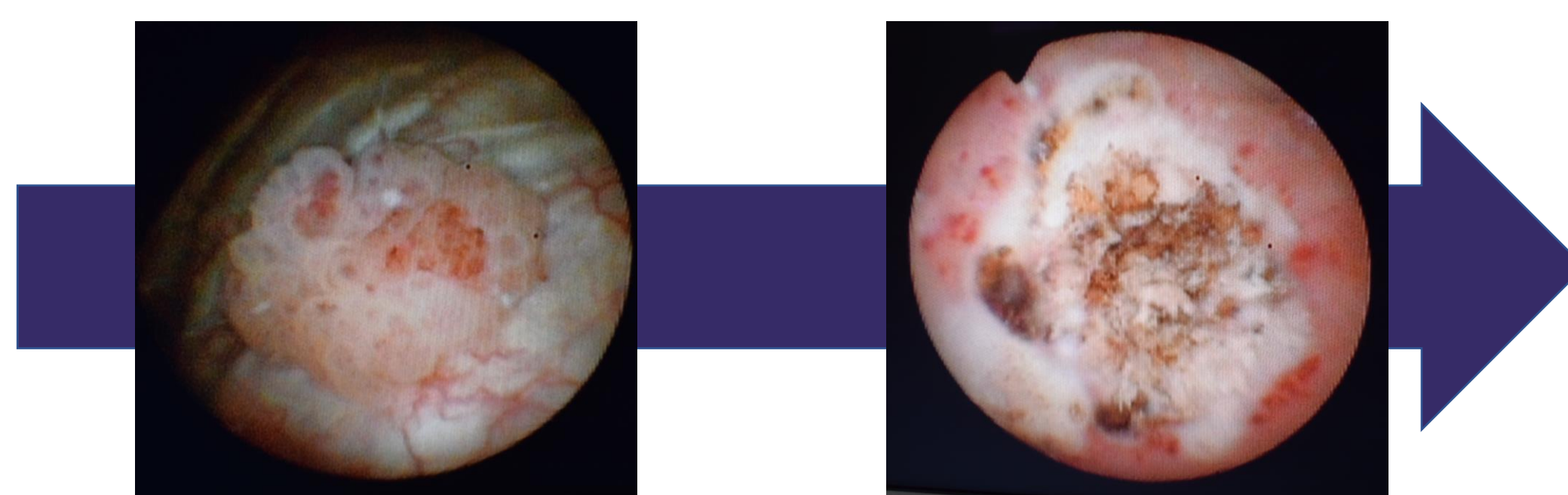
Advantages

- Cheaper than TURBT and can be performed in an outpatient setting
- No requirement to stop anticoagulation
- Fewer complications than TURBT
- Reduces anaesthetic impact on patients
- Well tolerated by patients
- Short learning curve if already familiar with flexible cystoscopy

Disadvantages

- Requires laser safe equipment and laser safety training
- Uncomfortable when treating prostatic urethra or veru tumours.
- Difficult to treat bladder neck and large tumours
- No evidence in treatment of primary TCC
- Lack of robust long term evidence

TULA treatment of a small papillary recurrence



Conclusions

TULA is a low cost, safe office based alternative to traditional anaesthetic delivered cystoscopic treatments for recurrent TCC. In addition to that it offers ablative treatment/palliation option for patients with significant co-morbidity for whom standard tumour resection or general anaesthetic would not be a viable option. It is easily incorporated into flexi cystoscopy surveillance regimes. TULA could be offered to patients at the time of surveillance cystoscopy if there is evidence of recurrence as pro-active way of management rather than allowing tumours to increase to a large enough size to justify the risk of TURBT.

In addition to that the future of TULA has potential. It's use in the management of primary TCC has yet to be explored. In addition to that there is scope for delivering an outpatient-based service in the management of urethral stricture disease. TULA has the potential to be a powerful tool in the provision of an outpatient service to manage bladder cancer recurrence helping to reduce the burden on urological operating lists and services.

References

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